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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/546,214	04/10/2000	Atsushi Watanabe	392.1680/JDH	3614

21171 7590 07/18/2003

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EXAMINER

BUGG, GEORGE A

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 07/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/546,214

Applicant(s)

WATANABE ET AL. 

Examiner

George A Bugg

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 4,680,802 to Nishida et al.
3. As disclosed by the title of the Nishida reference, an image processor for the detection of posture is taught. Figure 1, Element 3, discloses a camera, or image-capturing device. Further disclosed, in column 2, line 28 – column 3, line 13, Nishida teaches that input images are taken and identification parameters, as well as posture, or positioning processing is performed. Posture information, relates to the objects position, or orientation, and would depend entirely upon the position of the image-capturing device. Furthermore, Nishida discloses in column 2, lines 25-28 that the direction of the component parts must be known. Therefore, directional information relating to part and camera orientation is known. Nishida also teaches the matching process claimed by Applicant in column 2, line 28 – column 3, line 13, wherein images captured by the camera, are compared to stored images, to positively identify the object being imaged. Reference models are created by imaging a component and creating the identification parameters disclosed by Nishida. The fact that a matching process is

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utilized, to determine positive identification of a component, is itself a positive recitation that reference objects, or object of detection, have identical shapes.

4. As for claims 2 and 3, reference models are created, and comprise captured image data, of a reference object, as described in column 2, line 28 – column 3, line 13. Furthermore, the need to train or teach the system, by utilizing reference models and images, for future component identification would be inherent.

5. As for claim 4, in column 2, lines 28-39, refers to the image-capturing process, in which Nishida discloses a process in which the profile of an object is captured. Profile refers to a two-dimensional image, and therefore teaches a two-dimensional camera.

6. With regard for claim 8, Figure 1 of the Nishida reference shows the camera attached to a robot.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,680,802 to Nishida et al.

9. With regard to claim 5, although the reference does not specifically teach a known distance between the camera and the object being imaged, Figure 1 appears to show the camera at fixed location. Therefore, it would have been obvious to one of

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ordinary skill the art to place the camera at a predetermined distance from the object to be imaged for the purpose of enhanced optical and/or image analysis.

10. Claims 6, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,680,802 to Nishida et al., in view of US Patent No. 6,026,189 to Greenspan.

11. As for claim 6, while Nishida fails to disclose three-dimensional imaging, Greenspan does, in column 1, lines 4-9, and shows sensor views in Figures 10A and 11A. Therefore it would have been obvious to one of ordinary skill in the art to combine the teachings of Nishida and Greenspan, for the purpose of creating a more robust object recognition system.

12. As for claim 7, an apparatus, which is capable of obtaining three-dimensional data, is also capable of obtaining two-dimensional data. Furthermore, distance information, such as the distance from a camera to an object to be imaged is well known in the art of optics and image analysis. (Official Notice)

13. With regard to claim 9, Greenspan teaches, in column 6, lines 41-48, that remote sensing and imaging is well known, and further, as shown by Figure 2, that the system is capable of processing on or off line.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with regards to image analysis, as it pertains to object recognition.

US Patent No. 6,424,745 B1 to Hansen et al.

US Patent No. 6,473,784 B1 to Bentley et al.

US Patent No. 6,266,442 B1 to Laumeyer et al.

US Patent No. 6,445,814 B2 to Iijima et al.

US Patent No. 5,550,928 to Lu et al.

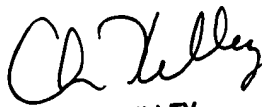
Any inquiry concerning this communication or earlier communications from the examiner should be directed to George A Bugg whose telephone number is (703) 305-2329. The examiner can normally be reached on Monday-Thursday 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher S Kelley can be reached on (703) 305-4856. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-5359.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

George A Bugg
Examiner
Art Unit 2613

GAB
June 26, 2003


CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600